UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,371	11/26/2003	Bhushan Mangesh Kanekar	CISCP110C1	8041

22434 7590 12/15/2004

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER	
JAGANNATHAN, MELANIE	
ART UNIT	**PAPER NUMBER**
2666	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,371	KANEKAR ET AL.	
	Examiner	Art Unit	
	Melanie Jagannathan	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-108* is/are pending in the application.

4a) Of the above claim(s) *1-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-108* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-6, 9-18 drawn to packet forwarding, classified in class 370, subclass 395.

II. Claims 7,8 drawn to network configuration, classified in class 370, subclass 254-258.

III. Claims 19-108, drawn to fault detection, classified in class 370, subclass 216-228.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II and Group III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, Group I has separate utility such as the use of fault detection in a hybrid network to carry synchronous and asynchronous traffic. Group II has separate utility such as the use of packet forwarding of variable length packets across a multiport switch. Group III has separate utility such as the use of network configuration in a multiple node dual level error recovery system. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II or Group III, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ms. Elise Heilbrunn on November 22, 2004 a provisional election was made with traverse to prosecute the invention of Group III, claims 19-108. Affirmation of this election must be made by applicant in replying to this Office action.

Claims 1-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

2. Applicants are reminded to **cancel non-elected claims 1-18.**

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims **19-108** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims **1-53**, of U.S. Patent No. 6,751,191.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims **1-2** of patent 6,751,191 essentially teach the same steps/means as

claims **19-20** of current application. Even though claims **19-20** of current application are broadened by omitting limitation the shared set of interfaces enabling the first router and second router to share forwarding data for forwarding packets on the shared set of interfaces, it has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136 USPQ 184(CCPA). Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969); omission of a reference element whose function is not needed would be an obvious variation.

Rejection of claims **21-24** with claims **3-6** of patent follows the same rationale as for claims above.

In Patent 6,751,191, claim **9** discloses method of forwarding packets in a network providing a first router, providing a second router, the first router and the second router sharing a single set of interfaces, sending synchronized state of information indicating states of ports associated with the set of interfaces and VLAN membership information via the set of interfaces and detecting a failure of second router such that the first router forwards packets received at the single set of interfaces in response to the detection of failure at the second router. In claims **19, 64** of current application, a device/computer readable medium for forwarding packets in a network is disclosed, comprising a first router having a first processor and first memory associated therewith, a second router having a second processor and second memory associated therewith, the first router and the second router sharing a set of interfaces, means for sending synchronized state of information indicating states of ports associated with the set of interfaces and VLAN membership information via the set of interfaces and means for detecting a failure of

second router such that the first router forwards packets received at the set of interfaces in response to the detection of failure at the second router.

Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **10** of patent 6,751,191 discloses a method providing the first router and second router in a single device, wherein the failure is detected through a signal sent within the device from the second router to the first router. Claims **20,65** of current application discloses device/computer readable medium wherein the first router and second router are implemented in a single device, wherein the failure is detected through a signal sent within the device from the second router to the first router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **11** of patent 6,751,191 discloses a method further comprising maintaining a first set of forwarding data associated with the first router, maintaining a second set of forwarding data associated with the second router, the first set of forwarding data and second set of forwarding data comprising layer 2 protocol information and layer 3 protocol information for forwarding packets, sending forwarding data updates from the second router to the first router prior to failure of second router and updating the first set of forwarding data associated with the first router with the forwarding data updates from the second router. Claims **21,66** of current application discloses a device/computer readable medium further comprising a means for maintaining a first set of forwarding data associated with the first router, means for maintaining a

second set of forwarding data associated with the second router, the first set of forwarding data and second set of forwarding data comprising layer 2 protocol information and layer 3 protocol information for forwarding packets, means for sending forwarding data updates from the second router to the first router prior to failure of second router and means for updating the first set of forwarding data associated with the first router with the forwarding data updates from the second router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **12** of patent 6,751,191 discloses a method wherein the forwarding data updates include layer 2 protocol information. Claims **22,67** of current application discloses a device/computer readable medium wherein the forwarding data updates include layer 2 protocol information. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **13** of patent 6,751,191 discloses a method further comprising obtaining data from the shared set of interfaces by the first router prior to the failure of the second router and incorporating the obtained data in first set of forwarding data. Claims **23,68** of current application discloses a device/computer readable medium further comprising means for obtaining data from the shared set of interfaces by the first router prior to the failure of the second router and means for incorporating the obtained data in first set of forwarding data. Having these method claims readily available, one of ordinary skill in the art would be motivated

to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **14** of patent 6,751,191 discloses a method wherein the data obtained by first router includes one or more shortcuts established by second router, the one or more shortcuts specifying layer 3 forwarding information. Claims **24,69** of current application discloses a device/computer readable medium wherein the data obtained by first router includes one or more shortcuts established by second router, the one or more shortcuts specifying layer 3 forwarding information. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **15** of patent 6,751,191 discloses a method further comprising assigning a shared IP address and shared MAC address to the first router and second router, assigning a first MAC address to first router, assigning a second MAC address to second router and configuring a default gateway such that the default gateway IP address is associated with the shared IP address. Claims **25,70** of current application discloses a device/computer readable further comprising means for assigning a shared IP address and shared MAC address to the first router and second router, means for assigning a first MAC address to first router, means for assigning a second MAC address to second router and means for configuring a default gateway such that the default gateway IP address is associated with the shared IP address. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **48** of patent 6,751,191 discloses a method wherein a plurality of VLANs are coupled to the set of interfaces. Claims **26,71** of current application disclose a device/computer readable medium wherein a plurality of VLANs are coupled to the set of interfaces. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **49** of patent 6,751,191 discloses a method further comprising performing a load distribution among the first router and second router upon a source of incoming packets. Claims **27,72** of current application disclose a device/computer readable medium further comprising means for performing a load distribution among the first router and second router upon a source of incoming packets. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **50** of patent 6,751,191 discloses a method further comprising associating the plurality of VLANs with one or more default gateways. Claims **28,73** of current application discloses a device/computer readable medium further comprising means for associating the plurality of VLANs with one or more default gateways. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **51** of patent 6,751,191 discloses a method further comprising associating one or more of the plurality of VLANs with the default gateway. Claims **29,74** of current application discloses a device/computer readable medium further comprising means for associating one or more of the plurality of VLANs with the default gateway. Having these method claims readily

available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **52** of patent 6,751,191 discloses a method further comprising associating one or more of the set of interfaces with the default gateway. Claims **30,75** of current application discloses a device/computer readable further comprising means for associating one or more of the set of interfaces with the default gateway. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **53** of patent 6,751,191 discloses a method wherein the source is one of the plurality of VLANs. Claims **31,76** of current application 191 discloses a device/computer readable medium wherein the source is one of the plurality of VLANs. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **16** of patent 6,751,191 discloses a method further comprising associating the shared IP address with the first MAC address. Claims **32,77** of current application discloses a device/computer readable medium further comprising means for associating the shared IP address with the first MAC address. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **17** of patent 6,751,191 discloses a method further comprising associating the shared IP address with the second MAC address in response to a failure of the first router. Claims **33,78** of current application discloses a device/computer readable medium further

comprising means for associating the shared IP address with the second MAC address in response to a failure of the first router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **18** of patent 6,751,191 discloses a method wherein configuring a default gateway includes configuring a first default gateway and a second default gateway further comprising associating a first host with a first default gateway and associating a second host with a second default gateway, wherein the first default gateway and the second default gateway are identified with at least one of the first router and second router, thereby enabling a packet to be forwarded via the first or the second default gateway when at least one of the source and destination of packet identifies the first host or the second host. Claims **34,79** of current application discloses a device/computer readable medium wherein the means for configuring a default gateway includes configuring a first default gateway and a second default gateway further comprising means for associating a first host with a first default gateway and means for associating a second host with a second default gateway, wherein the first default gateway and the second default gateway are identified with at least one of the first router and second router, thereby enabling a packet to be forwarded via the first or the second default gateway when at least one of the source and destination of packet identifies the first host or the second host. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **19** of patent 6,751,191 discloses a method further comprising determining whether the first router or second router function as a master router. Claims **35,80** of current application

discloses a device/computer readable medium further comprising means for determining whether the first router or second router function as a master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **20** of patent 6,751,191 discloses a method comprises ascertaining from priorities assigned to the first router and second router which of the first router and second router functions as the master router. Claims **36,81** of current application discloses a device/computer readable medium comprises means for ascertaining from priorities assigned to the first router and second router which of the first router and second router functions as the master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **21** of patent 6,751,191 discloses a method wherein determining comprises receiving a signal at the first router from the second router, ascertaining whether the signal asserts that the second router is the master router, wherein when it is ascertained that the signal asserts that the second router is the master router, it is ascertained that the first router is the slave router and wherein when it is ascertained that the signal does not assert that the second router is the master router, it is ascertained that the first router is the master router. Claims **37,82** of current application discloses a device/computer readable medium wherein means for determining comprises means for receiving a signal at the first router from the second router, means for ascertaining whether the signal asserts that the second router is the master router, wherein when it is ascertained that the signal asserts that the second router is the master router, it is ascertained that the first router is the slave router and wherein when it is ascertained that the signal does not

assert that the second router is the master router, it is ascertained that the first router is the master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **22** of patent 6,751,191 discloses a method further comprising reading a configuration file for configuration information for both the first router and second router, wherein at least some of the configuration information is identical for the first router and second router. Claims **38,83** of current application discloses a device/computer readable medium further comprising means for reading a configuration file for configuration information for both the first router and second router, wherein at least some of the configuration information is identical for the first router and second router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **23** of patent 6,751,191 discloses a method in a master router comprising maintaining a routing table, running a protocol, updating a database in the master router with updates, the updates including at least one of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of master router and sending the updates to slave router, thereby enabling the slave router to forward packets received at the set of interfaces using the updates received from master router. Claim **39,84** of current application disclose a master router/computer readable medium comprising means for maintaining a routing table, means for running a protocol, means for updating a database in the master router with updates, the updates including at least one of synchronized state information

indicating states of ports associated with the set of interfaces and VLAN membership of master router and means for sending the updates to slave router, thereby enabling the slave router to forward packets received at the set of interfaces using the updates received from master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **24** of patent 6,751,191 discloses a method wherein the protocol is a layer 2 protocol and the updates include layer 2 protocol updates, wherein the sending the updates comprises sending synchronized state information from master router to slave router to synchronize states of ports associated with set of interfaces. Claims **40,85** of current application discloses a master router/computer readable medium wherein the protocol is a layer 2 protocol and the updates include layer 2 protocol updates, wherein the means for sending the updates comprises means for sending synchronized state information from master router to slave router to synchronize states of ports associated with set of interfaces. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **25** of patent 6,751,191 discloses a method wherein the updates do not include information associated with routing table maintained by master router wherein sending updates comprises sending VLAN membership of master router to slave router such that the slave has access to each VLAN associated with master router upon failure of master router. Claims **41,86** of current application discloses a master router/computer readable medium wherein the updates do not include information associated with routing table maintained by master router wherein

means for sending updates comprises means for sending VLAN membership of master router to slave router such that the slave has access to each VLAN associated with master router upon failure of master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **26** of patent 6,751,191 discloses a method wherein sending updates comprises sending synchronized state information from master router to slave router to synchronize states of ports associated with the set of interfaces and sending VLAN membership of master router to slave router such that the slave has access to each VLAN associated with master router upon failure of master router. Claims **42,87** of current application discloses a master router/computer readable medium wherein means for sending updates comprises means for sending synchronized state information from master router to slave router to synchronize states of ports associated with the set of interfaces and means for sending VLAN membership of master router to slave router such that the slave has access to each VLAN associated with master router upon failure of master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **27** of patent 6,751,191 discloses a method further comprising using the synchronized state information on the slave router in response to a detection of failure of master router. Claims **43,88** of current application discloses a master router/computer readable medium further comprising means for using the synchronized state information on the slave router in response to a detection of failure of master router. Having these method claims readily available,

one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **28** of patent 6,751,191 discloses a method further including sending forwarding engine information from the master router to slave router such that second forwarding engine is initialized and sending hardware information from master router to slave router. Claims **44,89** of current application discloses a master router/computer readable medium further including sending forwarding engine information from the master router to slave router such that second forwarding engine is initialized and sending hardware information from master router to slave router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **29** of patent 6,751,191 discloses in a slave router, a method of forwarding packets received at a set of interfaces, the method comprising: maintaining a routing table; receiving updates from a master router running a protocol, the updates including at least one of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of the master router; and updating a database with the updates received from the master router, thereby enabling the slave router to forward packets received at the set of interfaces upon failure of the master router. Claims **45,90** of current application disclose a slave router/computer readable medium for forwarding packets received at a set of interfaces, comprising: means for maintaining a routing table; means for receiving updates from a master router running a protocol, the updates including at least one of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of the

master router; and means for updating a database with the updates received from the master router, thereby enabling the slave router to forward packets received at the set of interfaces upon failure of the master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **30** of patent 6,751,191 discloses method wherein the protocol is a layer 2 protocol and the updates include layer 2 protocol updates. Claims **46,91** of current application disclose slave router/computer readable medium wherein the protocol is a layer 2 protocol and the updates include layer 2 protocol updates. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **31** of patent 6,751,191 discloses a method wherein the updates do not include information associated with a layer 3 protocol. Claims **47,92** of current application disclose slave router/computer readable medium wherein the protocol is a layer 2 protocol and the updates include layer 2 protocol updates. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **32** of patent 6,751,191 discloses method further comprising: detecting a failure of the master router; and running the protocol on the slave router. Claims **48,93** of current application discloses slave router/computer readable medium further comprising means for detecting a failure of the master router and means for running the protocol on the slave router. Having these method claims readily available, one of ordinary skill in the art would be motivated

to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **33** of patent 6,751,191 discloses method further comprising: sending acknowledgement of the updates from the slave router to the master router. Claims **49,94** of current application disclose slave router/computer readable further comprising means for sending acknowledgement of the updates from the slave router to the master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **34** of patent 6,751,191 discloses method of forwarding packets in a switching system, the system comprising a master router and a slave router having a shared set of interfaces, the method comprising: maintaining a first set of forwarding data for the master router and a second set of forwarding data for the slave router; sending forwarding data updates from the master router to the slave router; sending at least one of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of the master router to the slave router; obtaining packet header data from the shared set of interfaces; and updating the second set of forwarding data with the forwarding data updates sent from the master router and the packet header data obtained from the shared set of interfaces. Claims **50,95** of current application disclose switching system/computer readable medium of forwarding packets in a switching system, the system comprising a master router and a slave router having a shared set of interfaces, comprising: means for maintaining a first set of forwarding data for the master router and a second set of forwarding data for the slave router; means for sending forwarding data updates from the master router to the slave router; means for sending at least one

of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of the master router to the slave router; means for obtaining packet header data from the shared set of interfaces; and means for updating the second set of forwarding data with the forwarding data updates sent from the master router and the packet header data obtained from the shared set of interfaces. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **35** of patent 6,751,191 discloses method wherein obtaining packet header data from the shared set of interfaces is performed with the slave router. Claims **51,96** of current application disclose switching system/computer readable medium wherein obtaining packet header data from the shared set of interfaces is performed with the slave router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **36** of patent 6,751,191 discloses method wherein the forwarding data updates include layer 2 protocol updates and the packet header data obtained from the shared set of interfaces includes one or more shortcuts established by the master router, the one or more shortcuts specifying layer 3 forwarding information. Claims **52,97** of current application disclose switching system/computer readable medium wherein the forwarding data updates include layer 2 protocol updates and the packet header data obtained from the shared set of interfaces includes one or more shortcuts established by the master router, the one or more shortcuts specifying layer 3 forwarding information. Having these method claims readily

available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **37** of patent 6,751,191 discloses method further comprising: maintaining a first routing table associated with the master router; and maintaining a second routing table associated with the slave router. Claims **53,98** of current application disclose switching system/computer readable medium further comprising: means for maintaining a first routing table associated with the master router; and means for maintaining a second routing table associated with the slave router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **38** of patent 6,751,191 discloses method wherein the second routing table associated with the slave router is not recalculated in response to a failure of the master router. Claims **54,99** of current application disclose switching system/computer readable medium wherein the second routing table associated with the slave router is not recalculated in response to a failure of the master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **39** of patent 6,751,191 discloses method further comprising updating the second set of forwarding data in response to a failure of the master router. Claims **55,100** of current application disclose switching system/computer readable medium further comprising means for updating the second set of forwarding data in response to a failure of the master router. Having

these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **40** of patent 6,751,191 discloses method wherein updating the second set of forwarding data comprises invalidating one or more shortcuts established by the master router, the one or more shortcuts specifying layer 3 forwarding information. Claims **56,101** of current application disclose switching system/computer readable medium wherein means for updating the second set of forwarding data comprises means for invalidating one or more shortcuts established by the master router, the one or more shortcuts specifying layer 3 forwarding information. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **41** of patent 6,751,191 discloses in a system including a first router and a second router having a shared set of interfaces, a first forwarding engine coupled to the set of interfaces and the first router, the first forwarding engine being associated with a first set of forwarding engine tables for facilitating forwarding of packets in hardware, and a second forwarding engine coupled to the set of interfaces and the second router, the second forwarding engine being associated with a second set of forwarding engine tables for facilitating forwarding of packets in hardware, a method of forwarding a packet received at the set of interfaces comprising: sending at least one of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of the first router to the second router; observing the packet at the set of interfaces to obtain information from the packet; and updating the first and second sets of forwarding engine tables with the obtained information such that the packet is associated with

at least one of the first router and the second router, thereby enabling the first router and the second router to forward a packet using the obtained information. Claims **57,102** of current application disclose system/computer readable medium including a first router and a second router having a shared set of interfaces, a first forwarding engine coupled to the set of interfaces and the first router, the first forwarding engine being associated with a first set of forwarding engine tables for facilitating forwarding of packets in hardware, and a second forwarding engine coupled to the set of interfaces and the second router, the second forwarding engine being associated with a second set of forwarding engine tables for facilitating forwarding of packets in hardware, a method of forwarding a packet received at the set of interfaces comprising means for sending at least one of synchronized state information indicating states of ports associated with the set of interfaces and VLAN membership of the first router to the second router; means for observing the packet at the set of interfaces to obtain information from the packet; and means for updating the first and second sets of forwarding engine tables with the obtained information such that the packet is associated with at least one of the first router and the second router, thereby enabling the first router and the second router to forward a packet using the obtained information. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **42** of patent 6,751,191 discloses method wherein the first forwarding engine has an associated layer 2 table and layer 3 table, and the second forwarding engine has an associated layer 2 table and layer 3 table, wherein the layer 2 tables each associate one or more MAC addresses with the first router or the second router, and wherein the layer 3 tables each specify

one or more shortcuts including layer 3 forwarding information, each one of the shortcuts being associated with a flow associated with a source IP address and destination IP address, the method further comprising: detecting a failure of the master router; and updating entries in the layer 2 table associated with the slave router such that each one of the entries is mapped to the slave router rather than the master router. Claims **58,103** of current application disclose system/computer readable medium wherein the first forwarding engine has an associated layer 2 table and layer 3 table, and the second forwarding engine has an associated layer 2 table and layer 3 table, wherein the layer 2 tables each associate one or more MAC addresses with the first router or the second router, and wherein the layer 3 tables each specify one or more shortcuts including layer 3 forwarding information, each one of the shortcuts being associated with a flow associated with a source IP address and destination IP address, the method further comprising: means for detecting a failure of the master router; and means for updating entries in the layer 2 table associated with the slave router such that each one of the entries is mapped to the slave router rather than the master router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **43** of patent 6,751,191 discloses method further comprising: removing selected entries in the layer 3 table associated with the slave router, the selected entries specifying shortcuts associated with the master router, thereby enabling replacement entries to be created upon forwarding of packets such that the replacement entries specify shortcuts associated with the slave router. Claims **59,104** of current application disclose system/computer readable medium further comprising: means for removing selected entries in the layer 3 table associated

with the slave router, the selected entries specifying shortcuts associated with the master router, thereby enabling replacement entries to be created upon forwarding of packets such that the replacement entries specify shortcuts associated with the slave router. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **44** of patent 6,751,191 discloses method further comprising forwarding a packet via the second forwarding engine. Claims **60,105** of current application disclose system/computer readable medium further comprising forwarding a packet via the second forwarding engine. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **45** of patent 6,751,191 discloses method wherein the first router has an associated first routing table for facilitating forwarding of packets in software and the second router has an associated second routing table for facilitating forwarding of packets in software, the method further comprising: running a first routing protocol on the first router and a second routing protocol on the second router; and separately building the first routing table and the second routing table. Claims **61,106** of current application disclose system/computer readable medium wherein the first router has an associated first routing table for facilitating forwarding of packets in software and the second router has an associated second routing table for facilitating forwarding of packets in software, the method further comprising: means for running a first routing protocol on the first router and a second routing protocol on the second router; and means for separately building the first routing table and the second routing table. Having these method

claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **46** of patent 6,751,191 discloses method wherein the first routing protocol and the second routing protocol are different. Claims **62,107** of current application disclose system/computer readable medium wherein the first routing protocol and the second routing protocol are different. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Claim **47** of patent 6,751,191 discloses method wherein the first routing protocol and the second routing protocol are identical. Claims **63,108** of current application disclose system/computer readable medium wherein the first routing protocol and the second routing protocol are identical. Having these method claims readily available, one of ordinary skill in the art would be motivated to implement the steps into a device in order to provide a redundant system in an event of a failure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3163.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FRANK DUONG
PRIMARY EXAMINER

Melanie Jagannathan
Patent Examiner
AU 2666

MJ